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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,453	07/19/2001	Danny Graves	O00-073A	9668

7590

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EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/909,453	GRAVES ET AL.	
	Examiner	Art Unit	
	Thanh X Luu	2878	AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7 and 9-42 is/are pending in the application.
- 4a) Of the above claim(s) 16-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5-7,9-11,14,15 and 38-40 is/are allowed.
- 6) ☒ Claim(s) 12,13 and 26-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to amendments and remarks filed February 27, 2004. Claims 1, 5-7 and 9-42 are currently pending.

Claims 16-25 have been withdrawn. Examiner recommends cancellation of the claims.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 12 and 13, the claims are dependent from cancelled claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 26, 27, 32-34 and 36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (preamble of claim 1), hereinafter AAPA, in view of Yasuda (U.S. Patent 4,676,638).

Regarding claims 26, 27, 32-34 and 36, AAPA discloses (see preamble of claim 1) a precipitation sensor having an optical emitter, an optical receiver, a first mirror

surface for collimating light emitted from the optical emitter, a second mirror surface for focusing the emitted light upon the optical receiver, and an electronic circuit in electrical communication with the optical emitter and the optical receiver. AAPA do not specifically disclose an intermediate reflector. Yasuda teaches (see Figure 1) a precipitation sensor having an intermediate reflector (6c or 6e). Yasuda also teaches (see Figure 1) the intermediate reflector is proximate the emitter or receiver and the intermediate reflector comprises a first reflective or second reflective region. Yasuda further teaches (see Figure 3) the first or second reflective regions pass light at angles not giving rise to total reflection. In addition, Yasuda teaches (see Figure 1) the first or second reflective region having a first mean reflective point being displaced from the automotive glass (2) at least as great as a distance of the first or second leading edge of the first or second mirror surface is displaced from the automotive glass. Yasuda also teaches (see Figure 1) a working optical path from the emitter to the first mirror surface to a first reflective region to an outer surface of the automotive glass to a second reflective region to the second mirror surface to the receiver and the path being substantially within solid optical elements, and the first mirror, second mirror and the intermediate reflector comprises a single optical unit. Yasuda also teaches (see Figs.) the second mirror surface is positioned between the receiver and substantially all ambient light exiting from the glass toward the receiver. Yasuda further teaches (see Figure 1) molding glass between the intermediate reflector and the automotive glass. Yasuda recognizes that an intermediate reflector allows for improved detection and a more flexible configuration. Thus, it would have been obvious to a person of ordinary

skill in the art at the time the invention was made to provide an intermediate reflector in the apparatus and method of AAPA in view of Yasuda to improve detection or provide a desired mounting configuration.

5. Claims 26-31, 36, 37, 41 and 42, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (preamble of claim 1), hereinafter AAPA, in view of Pientka (U.S. Patent 5,811,793).

Regarding claims 26-31, 36, 37, 41 and 42, AAPA discloses (see preamble of claim 1) a precipitation sensor having an optical emitter, an optical receiver, a first mirror surface for collimating light emitted from the optical emitter, a second mirror surface for focusing the emitted light upon the optical receiver, and an electronic circuit in electrical communication with the optical emitter and the optical receiver. AAPA do not specifically disclose an intermediate reflector. Pientka teaches (see Figure) a precipitation sensor having an intermediate reflector (at 15 and 24). Pientka also teaches (see Figure) the intermediate reflector is proximate the emitter or receiver and the intermediate reflector comprises a first reflective or second reflective region. Pientka also teach (see Figure 1) field regulators (35). Pientka also teaches (see Figs.) the second mirror surface is positioned between the receiver and substantially all ambient light exiting from the glass toward the receiver. Pientka also teaches (see Figure) a glass molding and use of a coloring agent (see column 4, lines 47-50), and an optical notch (a valley in the ridges at 35, 36) as claimed. Pientka recognizes that an intermediate reflector allows for improved detection and a more flexible configuration. Thus, it would have been obvious to a person of ordinary skill in the art at the time the

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invention was made to provide an intermediate reflector in the apparatus and method of AAPA in view of Pientka to improve detection or provide a desired mounting configuration.

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (preamble of claim 1), in view of Yasuda or Pientka and further in view of Koyama et al. (U.S. Patent 6,285,037).

Regarding claim 35, AAPA in view of Yasuda or Pientka disclose the claimed invention as set forth above. AAPA, Yasuda and Pientka do not specifically disclose using visible light. Koyama et al. teach (see column 2) using visible light in a precipitation sensor. Thus, Koyama et al. recognize that visible light or any other wavelength of light is used in precipitation sensors. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use visible light in the apparatus or method of AAPA in view of Yasuda or Pientka and further in view of Koyama et al. as desired to reduce costs.

Allowable Subject Matter

7. Claims 1, 5-7, 9-11, 14, 15 and 38-40 allowed over the prior art of record.

Response to Arguments

8. Applicant's arguments with respect to claims 26-37 have been fully considered but they are not persuasive.

Applicant's generally asserts that the prior art does not disclose the mirror positioned in the position as claimed. Examiner disagrees. As understood, the mirror of the prior art references is positioned between the receiver and ambient light. Thus, the

application is not in condition for allowance and this rejection is proper.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X Luu whose telephone number is (571) 272-2441. The examiner can normally be reached on M-F (6:30-4:00) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thanh X Luu', with a stylized, flowing script.

Thanh X Luu
Primary Examiner
Art Unit 2878

04/04